an at least one discrete deposition domain deposited on said surface, said deposition domain being smaller than one micron squared in total area and deposited at a pre-selected location on the surface, the deposition domain including a long chain biomolecular deposition material having the capacity to bind the target material.

83. (Twice Amended) An array of deposition domains for the detection of one or more pre-determined target materials comprising:

a solid glass substrate including a substantially flat surface; and

an at least one discrete domain deposited on the surface of the substrate, each domain being deposited at a known location and being smaller than one micron squared in area, each domain further including at least one type of molecule with a binding affinity for one or more of the target materials, at least two domains containing different biologically or chemically based molecules.

89. (Twice Amended) A molecular array for characterizing molecular interaction events, comprising:

(a) a substrate; and

(b) at least one molecular deposition domain on said substrate wherein the spatial address of the domain is less than one micron squared in area, each domain includes a biologically or chemically based molecule directly deposited on the substrate at a pre-selected location, at least two domains containing different biologically or chemically based molecules.

91. (Twice Amended) A molecular array for characterizing molecular interaction events, comprising:

(a) a substrate; and

(b) at least one molecular deposition domain on said substrate wherein the spatial address of the domain is less than one micron squared in area, each domain includes a biologically or chemically based molecule directly deposited on the substrate at a pre-selected location, and wherein the molecular deposition domain intcracts with a molecular deposition probe having at least one microsphere attached thereto.